

Effectiveness of mobile applications for stress management

Andreea Daniela Predescu
Tutor: Soledad Quero Castellano

1- Introduction

Nowadays, due to the lifestyle we lead, we are involved in a constant circle of activity (we sleep little, we work long hours, we are pending on our mobile phones, studies, etc.), which causes us to be living in a society almost structured by stress. Effective non-pharmacological therapies have been developed to treat this stress (e.g., Hains & Szyjakowski, 1990). Some cognitive-behavioral based interventions have been shown to be effective in stress reduction (e.g., Gaab et al., 2003), but difficulties in its implementation, time and economic costs limit the access to treatment despite its proven efficacy. Stress that is not treated adequately can trigger more serious disorders like anxiety or depression. Technological interventions could be a possible solution for much of the stress we find in our society because it reduces some limitations such as cost, stigma and lack of time and qualified medical personnel available (Kazdin & Blase, 2011). According to the Digital 2019 Q2 Global Digital Statshot report, 5.11 billion people own a mobile phone, which represents 66% of the world's population.

The main objective of this review is to search for studies carried out on the effectiveness of mobile applications in stress management.

2. Methods

This systematic review was made using the PRISMA method. The databases that were used are: Psycarticles, PsycINFO, PubMed and Web of Science.

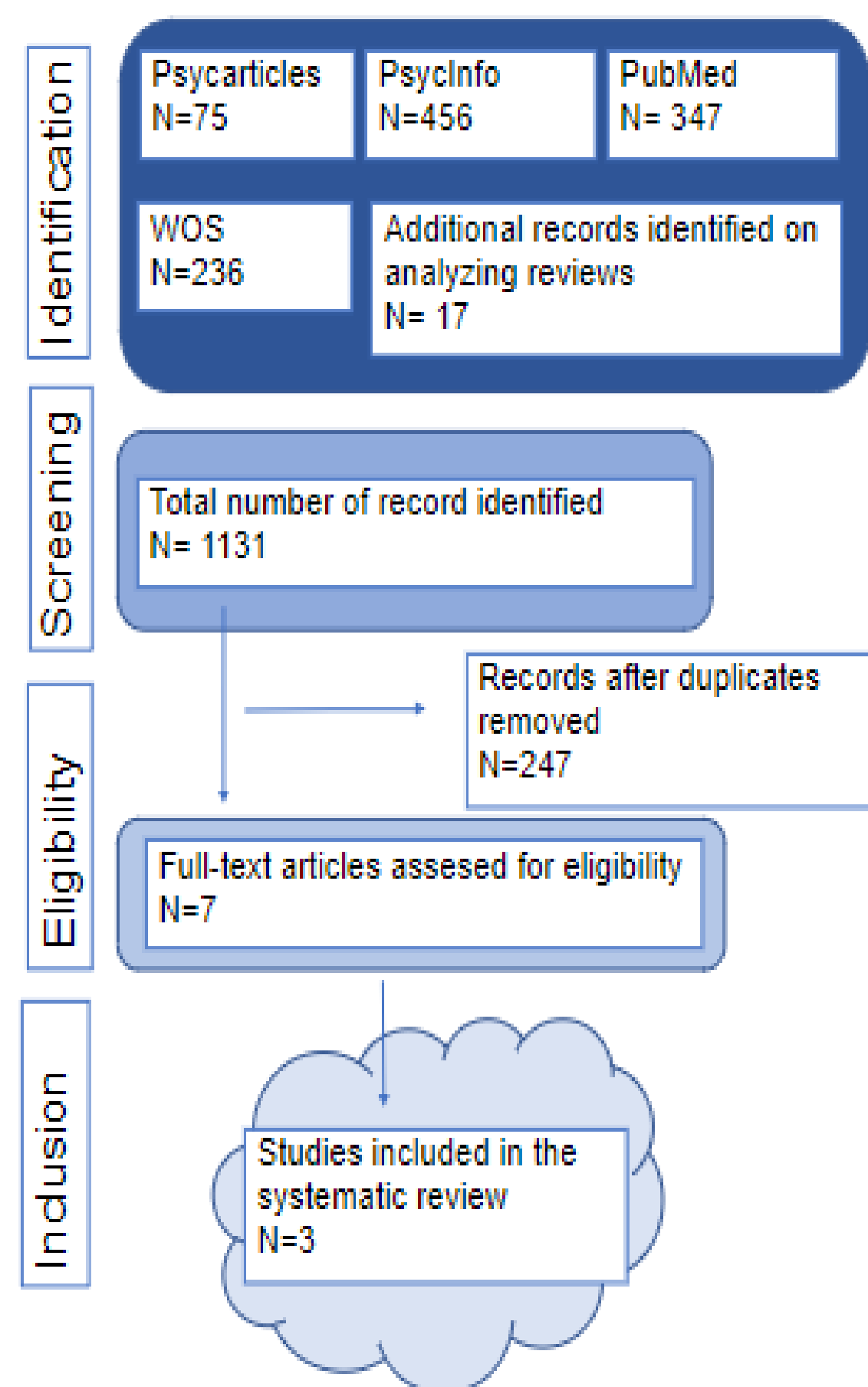
Inclusion criteria:

- Experimental studies
- Mobile apps
- Stress management
- Language: english and spanish

Exclusion criteria

- Internet-based cognitive-behavioral treatments (ICBT)
- Anxiety disorder
- Posttraumatic stress
- Bibliographic reviews

Keywords: technological interventions, Mobile applications, smartphone applications, mobile therapy, stress, stress management, stress control, burnout, social stress, work stress, academic stress, environmental stress, financial strain, psychological stress, acupational stress.



3.Results

Author (year)	N	Screening tool	Method	Outcomes
Coelhoso (2019)	N=653, Female (20-60 years). São Paulo, Brazil. employees at a private hospital	Not specified	Mobile app (iOS or Android)	The intervention group presented a significant increase on the well-being index and work-related well-being, as well a significant decreases in perceived stress, work related stress and general stress. The results indicate that the app was more effective at reducing employee stress and improving well-being levels.
Moberg (2019)	N=500 Female and male (≥18 years) Fluent in English	GAD-7 ≥5 ≤14 PHQ-8 ≥5 ≤14	Mobile app (iOS or Android) Pacifica	This study provides evidence that Pacifica is effective in reducing self-reported symptoms of depression, anxiety, and stress, particularly among individuals who utilize thought records and are not taking psychiatric medication.
Weber (2019)	N=532 Female and male (17-72 years) Recruited from six different European business in Germany, England and Northern Ireland from the private and public sector	Not specified	Mobile app Kelaa	Participants in the app group experienced a greater decrease in general and cognitive stress and a significantly more wellbeing over time. Additionally, use of the sleep tracking function led to an improvement in sleeping troubles.

4. Discussion

While many studies about ICBTs to treat anxiety disorder have been published (e.g., Newby, Williams & Andrews, 2014), there are very few studies on mobile applications to reduce stress levels, considering that it is a very current topic.

Researchers, clinicians, and professionals alike have also identified a paucity of empirical evidence for the effectiveness of mobile health interventions (Free et al., 2013). But it is an issue that should be given more importance:

- Firstly because stress is a very common problem that if not properly treated can lead to a more serious illness.
- And secondly, most of society has access to a smartphone, therefore it is a comfortable and accessible option to reach many people.

Resumen

Debido al estilo de vida que llevamos estamos envueltos en un constante círculo de actividad que provoca altos niveles de estrés. En los últimos tiempos se han desarrollado terapias psicológicas efectivas para tratar el estrés, una de las cuales es la terapia cognitiva conductual (TCC). Sin embargo, muchas personas tienen dificultades para acceder al tratamiento debido a una serie de obstáculos que hacen que la difusión de este tratamiento haya sido algo limitada. Numerosos estudios han encontrado que los TCC basados en internet permiten superar estos obstáculos. El objetivo de esta revisión sistemática es conocer la eficacia de las aplicaciones móviles en el manejo del estrés. Para ello se realizó una revisión bibliográfica utilizando el método PRISMA. Una vez especificadas las palabras clave se llevó a cabo la búsqueda en cuatro bases de datos (Psycarticles, PsycInfo, PubMed y Web of Science). Descartados los artículos que no cumplían los criterios de inclusión, se seleccionaron un total de 3 que sí lo hacían. En estos estudios se encontró que el grupo que utilizaba la aplicación móvil tuvo una mejora significativa en el nivel de estrés y bienestar general frente al grupo control, aumentando estos efectos beneficiosos a medida que había una mayor participación en la aplicación móvil. A partir de los resultados obtenidos en esta revisión se puede concluir, por un lado, que no hay apenas investigaciones relacionadas con este tema y, por otro, que los estudios que hay no son muy específicos, ya que en dos de estos estudios no se utilizó ninguna herramienta de cribado para elegir a los participantes. Con la actual pandemia, el uso de smartphones para aplicar un tratamiento de manejo del estrés es un método idóneo con el que poder llegar a muchas personas que lo necesitan y se le debería dar más visibilidad.

Abstract

Due to the lifestyle we lead, we are involved in a constant cycle of activity that causes high levels of stress. In recent times, effective psychological therapies have been developed to treat stress, one of which is cognitive behavioral therapy (CBT). However, many people find it difficult to access treatment due to a number of obstacles that make the dissemination of this treatment somewhat limited. Numerous studies have found that internet-based CBTs help to overcome these obstacles. The objective of this systematic review is to determine the efficacy of mobile applications in stress management. For this, a bibliographic review was carried out using the PRISMA method. Once the keywords were specified, a search was carried out in four databases (Psycarticles, PsycInfo, PubMed and Web of Science). After discarding the articles that did not meet the inclusion criteria, a total of 3 were selected that did meet them. In these studies, it was found that the group that used the mobile application had a significant improvement in the level of stress and general well-being compared to the control group, with more participation in the mobile application, the beneficial effects also increased. From the results obtained in this review, it can be concluded, on the one hand, that there is hardly any research related to this topic and, on the other hand, that the studies that exist are not very specific, since in two of these studies no screening tool was used to choose the participants. With the current pandemic, the use of smartphones to apply a stress management treatment is an ideal method with which to reach many people in need and should be given more visibility.

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